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REMARKS/ARGUMENTS

Claims 1-6, 8-10, 12, 13 and 15-18 are pending in this application. By this Amendment, Applicant amends claims 1, 6, 8, 12 and 15 and cancels claims 7, 11, 14 and 19.

Claims 7, 11, 14 and 19 have been canceled since these claims are directed to non-elected species. Applicant reserves the right to file a Divisional Application in order to pursue prosecution of non-elected claims 7, 11, 14 and 19.

Applicant appreciates the Examiner's indication that claims 8 and 15 would be allowable if rewritten in independent form including all of the features of the base claim and any intervening claims.

The Abstract of the Disclosure has been amended to correct an informality contained therein.

Claim 1 was rejected under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite. It appears that the Examiner is alleging that the last subparagraph of claim 1 is indefinite because it is a functional recitation. The Court in In re Swinehart and Sfiligoj, 169 USPQ 226 (CCPA 1971), overturned a similar rejection of a claim because the Examiner considered it "functional" by stating:

"We take the characterization 'functional', as used by the Patent Office and argued by the parties, to indicate nothing more than the fact that an attempt is being made to define something (in this case, a composition) by what it does rather than by what it is (as evidenced by specific structure or material, for example). In our view, there is nothing intrinsically wrong with the use of such a technique in drafting patent claims. Indeed, we have even recognized in the past the practical necessity for the use of functional language. It is improper to reject a claim under 35 U.S.C. §112, second paragraph, because the claim recites functions of structural elements. We are convinced that there is no support, either in the actual holdings of prior art cases or in the statute, for the proposition put forward here, that 'functional' language, in and of itself, renders a claim improper. We have also found no prior decision of this or any other court which may be said to hold that there is some other ground for objecting to a claim on the basis of any language, 'functional' or otherwise beyond what is already sanctioned by the provisions of 35 U.S.C. §112". Id. at 229.

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In addition, the Examiner is required to give weight to the functional recitations because courts do not regard the fact that a claim is functional as good ground to give such recitations "no weight" in view of the third paragraph of 35 U.S.C. §112. In re Land & Rogers, 151 USPQ 621 (CCPA 1966).

In order to advance prosecution, Applicant has amended claim 1 to more clearly recite that the "electrical length of the RF signal-conducting unit sandwiched between the plurality of movable electrodes is set such that an amplitude of a combined signal composed of RF signals reflected at positions of the RF signal-conducting unit facing the plurality of movable electrodes is less than an amplitude of each of signals reflected at positions of the RF signal-conducting unit facing the plurality of movable electrodes when the plurality of movable electrodes are disposed at positions where the signal is switched on".

Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 1-5 were rejected under 35 U.S.C. § 102(e) as being anticipated by Ma et al. (U.S. 6,686,820). Claims 6, 9, 10, 12, 13 and 16-18 were rejected under 35 U.S.C. § 102(e) as being anticipated by Deligianni et al. (U.S. 6,639,488). Applicant respectfully traverses the rejections of claim 1-6, 9, 10, 12, 13 and 16-18.

Claim 1 has been amended to recite:

"An RF-MEMS switch comprising:
a substrate;
a movable element
an RF signal-conducting unit arranged on the substrate;
a plurality of movable electrodes disposed on the movable
element, having a space provided therebetween in a direction of signal
conduction of the RF signal-conducting unit and arranged above the RF
signal-conducting unit;
a movable electrode displacing unit for displacing the
plurality of movable electrodes at the same time in the same direction
towards or away from the RF signal-conducting unit;
an upper member disposed above the movable element;
and

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at least one fixed electrode disposed on the upper member; wherein
when all of the plurality of movable electrodes are displaced in the direction away from the RF signal-conducting unit by the movable electrode displacing unit so as to be disposed at positions where a signal is switched on, conduction of an RF signal of the RF signal-conducting unit is switched on;
when all the plurality of movable electrodes are displaced in the direction towards the RF signal-conducting unit by the movable electrode displacing unit so as to be disposed at positions where the signal is switched off, conduction of the RF signal of the RF signal-conducting unit is switched off; and
an electrical length of the RF signal-conducting unit sandwiched between the plurality of movable electrodes is set such that an amplitude of a combined signal composed of RF signals reflected at positions of the RF signal-conducting unit facing the plurality of movable electrodes is less than an amplitude of each of signals reflected at positions of the RF signal-conducting unit facing the plurality of movable electrodes when the plurality of movable electrodes are disposed at positions where the signal is switched on." (emphasis added)

Applicant's claims 6 and 12 recite features that are similar to the features recited in Applicant's claim 1, including the above-emphasized features.

With the unique combination and arrangement of features recited in Applicant's claims 1, 6 and 12, including the features of "an upper member disposed above the movable element" and "at least one fixed electrode disposed on the upper member," Applicant has been able to provide an RF-MEMS switch which sufficiently reduces insertion loss and return loss of the switch and which sufficiently improves isolation characteristics of the switch (see, for example, the second full paragraph on page 2 of the originally filed specification).

The Examiner alleged that Ma et al. teaches all of the features recited in Applicant's claim 1, and that Deliglanni et al. teaches all of the features recited in Applicant's claims 6 and 12.

Applicant's claim 1 has been amended to recite the features of "an upper member disposed above the movable element" and "at least one fixed electrode disposed on the upper member." Applicant's claims 6 and 12 have been similarly

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amended. Support for these amendments may be found, for example, in Figs. 1A and 1B of the originally filed specification.

In contrast to Applicant's claims 1, 6 and 12, Ma et al. fails to teach or suggest any upper member that is disposed above the movable element upon which the movable electrodes 140 are disposed, and certainly fails to teach or suggest any fixed electrodes disposed on an upper member that is disposed above the movable element upon which the movable electrodes 140 are disposed. In fact, in the device of Ma et al. as shown in Figs. 6A and 6B, there are no elements that are disposed above the movable element upon which the movable electrodes 140 are disposed, and the movable element upon which the movable electrodes 140 are disposed is the uppermost element of the device.

Thus, Ma et al. clearly fails to teach or suggest the features of "an upper member disposed above the movable element" and "at least one fixed electrode disposed on the upper member" as recited in Applicant's claim 1, and similarly in Applicant's claims 6 and 12.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(e) as being anticipated by Ma et al.

Similar to Ma et al., Deligianni et al. fails to teach or suggest any upper member that is disposed above the upper beams 120, which appear to most closely correspond to the movable element recited in Applicant's claims 1, 6 and 12, and certainly fails to teach or suggest any fixed electrodes disposed on an upper member that is disposed above the upper beams 120. In fact, in the device of Deligianni et al., there are no elements that are disposed above the upper beams 120, and the upper beams 120 are the uppermost elements of the device of Deligianni et al.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 6 and 12 under 35 U.S.C. § 102(e) as being anticipated by Deligianni et al.

Accordingly, Applicant respectfully submits that Ma et al. and Deligianni et al., applied alone or in combination, fail to teach or suggest the unique combination and

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arrangement of elements recited in Applicant's claims 1, 6 and 12.

In view of the foregoing amendments and remarks, Applicant respectfully submits that Claims 1, 6 and 12 are allowable. Claims 2-5, 8-10, 13 and 15-18 depend upon claims 1, 6 and 12, and are therefore allowable for at least the reasons that claims 1, 6 and 12 are allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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